

Figures 6 to 10. For the moment, it will suffice to note that the weave pattern comprises a first group of elongate ribbons 10 displayed in a first visually distinct manner, in this case in an easily identifiable colour, and displayed on a display screen in a substantially horizontal orientation. In this case, two of the  
 5 ribbons in the first group 10 represent two presenting symptoms respectively ("coughing blood" and "breathlessness"), together with a plurality of corollary signs used to assist with diagnosis of the patient's illness.

A second group of elongate ribbons 12 are displayed in a substantially vertical orientation and are arranged to overlap with the first group of ribbons 10. In this  
 10 illustrated example, the second group of ribbons 12 represent a variety of possible diagnoses of the patient's illness. In accordance with the DataWeaver method, a visually distinct intersection is generated for each point at which a ribbon from the first group 10 overlaps with a ribbon from the second group 12. Using the analogy of weaving, each intersection would normally give only the  
 15 simple options of "A" over "B" or "B" over "A". This would merely give two meanings to each intersection, one of which may typically be "not relevant". However, the complexity of some weaves would mean that the priority of these two options, i.e., which one carries the meaning "not relevant" would quickly become confusing. The DataWeaver method therefore preferably extends the  
 20 analogy of ribbon weaving by providing appropriately located longitudinal slits in one ribbon, through which the other ribbon passes. This provides an increased number of ways in which the intersection can be generated and thus provide a series of distinct meanings. Other icons may be used, including a question mark to tell the user that absent information could be useful, but the  
 25 preferred implementation maintains the metaphor of physical ribbons.

Examples of the meanings which may be ascribed to different forms of intersection are illustrated in Figure 2 as follows:

- |                    |   |
|--------------------|---|
| Intersection 14    | <i>Relevant:</i> Slit in centre of A,B passes through (over-through-under). |
| 30 Intersection 16 | <i>Not relevant:</i> simple one over, one under.                            |

- 9 -

- Intersection 18      *Present (e.g., symptom):* Two equally-spaced slits in A,B, passes through these so that the passing ribbon (B) is not visible between the two slits (over-through-under-through-over)
- 5      Intersection 20      *Not present (e.g., symptom):* Two equally-spaced slits in A,B passes through these so that the passing ribbon (B) is only visible between the two slits (under-through-over-through-under).
- 10      Intersection 22      *For investigation:* The two ribbons intersect diagonally, neither dominating.

With the exception of the last example, intersection 22, each of these forms of intersection makes one ribbon visually dominant at the point of overlap. For example, with intersection form 18 (*present*) the vertical ribbon is visually dominant as it is visible between the two slits, whereas with intersection from 15 20 the horizontal ribbon is visually dominant as it is visible between the two slits. Thus, if the weaving through the slits is organised consistently a visual "flow" can easily be discerned, giving a further information dimension. Where *present* and *not present* intersection indicators are being used, for example, in relation to medical symptoms, a clear passage down the middle of the dominant ribbon representing a possible diagnosis is immediately obvious, thus sending 20 a clear message regarding the pattern of data relationships and increasing the probability of an accurate diagnosis. By contrast, the *not present* intersection indicator blocks the centre passage along the dominant ribbon, and hence a negative message is given by the interruption of the visual "flow".

25      The height and width of a particular data ribbon can also be used to represent magnitude, or as in the case of differential diagnosis, comparative probability. Thus, in Figure 1, the ribbons in the second ribbon group 12 have been generated with varying degrees of thickness and mapped in decreasing order of probability. Thus, based on the diagnosis so far, Bronchial Carcinoma would

FOOT " 40400T

- 10 -

appear to be the most likely illness of those considered, whereas Goodpasture's Syndrome is the least likely.

5 The software which embodies the DataWeaver method is built as a general class of re-useable graphical widgets (viz. the area, map, weave, ribbon, ribbon group, intersections, time-box). The entire map is assembled by combining these widgets and attaching "information" and "action" objects to them according to the application process and logic. The map gets its direction of flow from the application logic/processes. The flow chart illustrated in Figure 3 shows the way a map may be constructed using the widgets. In the embodiment of Figure 10 3, three distinct ribbon groups and their intersections are being generated. In this context, a "weave" is a place at which many ribbons belonging to two or more ribbon groups intersect. A "map" is a collection of such ribbons, ribbon groups, intersections and weaves. An "information object" contains information regarding the object to which it is attached and its behaviour when it is clicked 15 on using the left and right mouse buttons. An "action object" contains a specification of the action that is to be performed such as bring up a dialogue box, add ribbons, etc., when the left or right mouse button is clicked.

20 In accordance with the DataWeaver method, the computer software creates a map object at step 50 and then obtains the data for ribbon groups 1, 2 and 3 at steps 100, 200 and 300. In the illustrated example, the map to be created is designed to enable the visualisation of relationships between data items or groups represented by ribbon groups 1 and 2, and the relationships between data represented by ribbon groups 1 and 3. These relationships may be pre-defined within the databases from which the information is obtained, or may be 25 entered by the user. The steps required to obtain intersection details for the ribbon groups 1 and 2 and for the ribbon groups 1 and 3 are shown as 400 and 500 respectively in Figure 3.

Having obtained the data for ribbon group 1 at step 100, the DataWeaver software then creates the appropriate number of ribbon objects for ribbon group